

*Special Issue on*  
**Reliability and Autonomic Management**  
at Journal of Computer Science

Science Publications ([www.scipub.org](http://www.scipub.org)), New York, USA feels honor to announce a Special Issue for The Journal of Computer Science (ISSN: 1549-3636) on "Reliability and Autonomic Management" to be published in 2006.

Most computer systems become increasingly large and complex, thereby compounding many reliability problems. Too often computer systems fail, become compromised, or perform poorly. To improve the system reliability, one of the most interesting methods is the Autonomic Management which offers a potential solution to these challenging research problems. It is inspired by nature and biological systems (such as the autonomic nervous system) that have evolved to cope with the challenges of scale, complexity, heterogeneity and unpredictability by being decentralized, context aware, adaptive and resilient. This new era of computing is driven by the convergence of biological and digital computing systems and is characterized by being self-defining, self-configuring, self-optimizing, self-protecting, self-healing, context aware and anticipatory.

This issue will include papers based on the presentation at the 1st IEEE Workshop on Reliability and Autonomic Management in Parallel and Distributed Systems (RAMPDS-05) whose web site can be found from <http://www.cs.iupui.edu/~ydai/RAMPDS05/RAMPDS05.htm> and papers applied for this call for papers. The purpose of this special issue is for computer scientists, industrial engineers and researchers to discuss and exchange experimental or theoretical results, novel designs, work-in-progress, experience, case studies, and trend-setting ideas in the area of reliability and autonomic management.

Possible topics include, but are not limited to:

- Ø Theoretical foundations of autonomic computing design
- Ø Design for system reliability
- Ø Survivability quantification
- Ø Security quantification
- Ø Self-healing, self-protecting and Fault-tolerant systems
- Ø Software and hardware reliability, verification and testing
- Ø Software aging and rejuvenation
- Ø Reliability measurement, modeling and evaluation
- Ø Tools and techniques for designing, analyzing and building autonomic systems and networks

- Ø Tools for design and evaluation of reliable systems
- Ø Implications of emerging technologies on reliable system design
- Ø Application-specific reliable system (e.g., embedded systems, WWW servers, transaction processing, grid computing)
- Ø Enabling technologies for self-managing systems and networks including Service-oriented Architectures, Web Services, XML, Peer-to-Peer and Open Grid Services
- Ø Reliable communication system
- Ø Economic, biological and social models used for autonomic communications
- Ø Long life systems to support communication infrastructure
- Ø Sensing, monitoring and measurements for self-managing systems and networks
- Ø Languages, development and securely programmable environments for autonomic communications systems
- Ø Human interaction with autonomic communication systems
- Ø Advanced information processing techniques for autonomic communications

### Guideline for Submission:

- a. In preparing the manuscript, authors should be subjected to the Information for Authors on Journal of Computer Science, which describes the standard format of papers. Information for Authors is available at [http://ansinet.org/sciencepub/instructions.php?j\\_id=jcs](http://ansinet.org/sciencepub/instructions.php?j_id=jcs)
- b. Please prepare a manuscript as a pdf or MS Word format and send to **Dr. Dai ([ydai@cs.iupui.edu](mailto:ydai@cs.iupui.edu))** by **August 15, 2005**. Please write the E-mail address of the representative author on the cover page of the manuscript with 5 KEYWORDS. The editorial committee will send a receipt notification to the representative author via E-mail within four days after submitting the manuscript.
- c. Please be advised that in the case that a large number of papers are accepted for publications, a portion of these papers may be published in another issue of the journal.

### Important Deadlines:

1. Aug. 15, 2005: submission deadline
2. Oct. 15, 2005: the first reviewing results reported to authors
3. Nov. 15, 2005: the revised paper submission
4. Dec. 31, 2005: final decision to authors
5. Jan. 20, 2006: authors send final manuscripts

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